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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,536	04/25/2001	David K. Vavro	42390.P10917	7252

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EXAMINER

TSAI, HENRY

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/842,536	Applicant(s) VAVRO, DAVID K.	
	Examiner Henry W.H. Tsai	Art Unit 2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/17/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-25,27 and 28 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,11 and 16 is/are rejected.
- 7) ☒ Claim(s) 5-10, 15, 17, 18, and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

[Handwritten mark]

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DETAILED ACTION

Claim Objections

1. Claim 26 is objected to because of the following informalities: in claim 26, line 3, it is not clear what is meant by "... in the first buffer it is determined ...". It is suggested to insert -if- after "buffer". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Lewchuk (U.S. Patent No. 6,047,363), hereafter referred to as Lewchuk'363.

Referring to claim 1, Lewchuk'363 discloses, as claimed, a processing element comprising: an instruction buffer (instruction cache 212 see Fig. 9); a first most often (MO) buffer (Reservation Station 217A, see Fig. 9) coupled to the instruction buffer (instruction cache 212 see Fig. 9); an execution unit (such as Execution Unit 218A, see Fig. 9) coupled to the instruction buffer to execute instructions stored within the first MO buffer (Reservation Station 217A, see Fig. 9) based upon a first predetermined profile (such as the type of instruction, see Col. 11, lines 13-19); and a decode module (Decode Unit 216, see Fig. 9), coupled to the instruction buffer (instruction cache 212 see Fig. 9), the first MO buffer (Reservation Station 217A, see Fig. 9), and the execution unit (Execution Unit comprising 218A and 218B, see Fig. 9), to decode an instruction to determine (based on such as the type of instruction, see Col. 11, lines 13-19) whether the instruction is to be stored in the first MO buffer.

As to claim 2, Lewchuk'363 also discloses: a second MO buffer (Reservation Station 217B, see Fig. 9) coupled to the

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instruction buffer and the decode module, wherein the execution unit (Execution Unit comprising 218A and 218B, see Fig. 9) executes instructions stored within the second MO buffer (Reservation Station 217B, see Fig. 9) based upon a second predetermined profile (such as the different type of instruction, see Col. 11, lines 13-19).

As to claim 4, Lewchuk'363 also discloses: the decode module (Decode Unit 216, see Fig. 9) decodes an instruction to determine (based on such as the type of instruction, see Col. 11, lines 13-19) whether the instruction is to be stored in the first MO buffer (Reservation Station 217A, see Fig. 9) or the second MO buffer (Reservation Station 217A, see Fig. 9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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4. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewchuk'363 in view of Tremblay et al. (U.S. Patent No. 6,615,338) hereafter referred to as Tremblay et al.'338.

Referring to claim 11, Lewchuk'363 discloses, as claimed, a processing element comprising: an instruction buffer (instruction cache 212 see Fig. 9); a first most often (MO) buffer (Reservation Station 217A, see Fig. 9) coupled to the instruction buffer (instruction cache 212 see Fig. 9); a second MO buffer (Reservation Station 217B, see Fig. 9) coupled to the instruction buffer; an execution unit (such as Execution Unit 218A, see Fig. 9) coupled to the instruction buffer to execute instructions stored within the first MO buffer (Reservation Station 217A, see Fig. 9) based upon a first predetermined profile (such as the type of instruction, see Col. 11, lines 13-19); and to execute instructions stored within the second MO buffer (Reservation Station 217B, see Fig. 9) based upon a second predetermined profile (such as the type of instruction, see Col. 11, lines 13-19); a decode module (Decode Unit 216, see Fig. 9), coupled to the instruction buffer (instruction cache 212 see Fig. 9), the first MO buffer (Reservation Station 217A, see Fig. 9), and the execution unit (Execution Unit comprising 218A and 218B, see Fig. 9), to decode an instruction to determine (based on such as the

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type of instruction, see Col. 11, lines 13-19) whether the instruction is to be stored in the first MO buffer.

Lewchuk'363 discloses the claimed invention except for being used as one of a plurality of processing elements.

Tremblay et al.'338 discloses a system (see Fig. 3) comprising: a plurality of processing elements (MPU1 110 and MPU2 112 see Fig. 3) and each processing element has the same structure and function.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plurality of processing elements in the Lewchuk'363's systems, as taught by Tremblay et al.'338, in order to increase the processing throughput for the Lewchuk'363's system.

Further, as shown in *St. Regis Paper Co. v Bemis Co.* 193 USPQ 8 (7th Cir. 1977), to duplicate parts for multiple effects generally does not provide patentable weight to the claimed invention.

As to claim 16, Lewchuk'363 also discloses: the first (such as the type of instruction, see Col. 11, lines 13-19) and second (such as the different type of instruction, see Col. 11, lines 13-19) predetermined profiles each include a plurality of profile bits (note a plurality of profile bits are certainly required to represent many (more than 3) instruction types in the

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Lewchuk'363's system), each profile bit indicating whether a corresponding instruction is to be executed at the execution unit during a particular instruction fetch cycle (since each instruction held in a specific reservation station is processed by a specific execution unit see Fig. 9).

Allowable Subject Matter

5. Claims 19-25, 27 and 28 are allowed.
6. Claim 26 would be allowable if rewritten to overcome the claim objections, set forth in this Office action.
7. Claims 5-10, 15, 17, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: Lewchuk'363, the closest reference, and the other prior art do not teach or fairly suggest: the step of loading the profile in a second buffer if the first instruction has not been designated to be stored in the

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first buffer (in claims 19 and 24). Further the combination of the above limitations with all of the other limitations in the respective independent claims is not obvious.

Response to Amendment

9. Applicant's amendments mailed 2/17/05 have been considered but are moot in view of the new ground(s) of rejection. As set forth in the art rejections above, Lewchuk'363 and Tremblay et al.'338 teach the claimed invention.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (571) 272-4176. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (571) 272-4162. Any inquiry of a general nature or relating to the

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status of this application or proceeding should be directed to
the TC central telephone number, 571-272-2100.

11. In order to reduce pendency and avoid potential delays,
Group 2100 is encouraging FAXing of responses to Office actions
directly into the Group at fax number: 703-872-9306. This
practice may be used for filing papers not requiring a fee. It
may also be used for filing papers which require a fee by
applicants who authorize charges to a PTO deposit account.
Please identify the examiner and art unit at the top of your
cover sheet. Papers submitted via FAX into Group 2100 will be
promptly forward to the examiner.



HENRY W. H. TSAI
PRIMARY EXAMINER

April 18, 2005